

## REMARKS

After entry of this Amendment, the pending claims are: claims 6-13, 15-18, 20 and 25-30. The Office Action dated March 26, 2007 has been carefully considered. Claims 1-5, 14, 19 and 21-24 were previously canceled. The Examiner is thanked for the indication of allowable subject matter in claim 20. Dependent claim 20 has been amended into independent claim form. No new matter has been added. Reconsideration and allowance of the present application in view of the above Amendments and the following Remarks is respectfully requested.

In the Office Action dated March 26, 2007, the Examiner:

- rejected claims 6, 7, 9-12, 18 and 25-30 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,669,915 to Caspar *et al.* ("Caspar");
- rejected claims 6-8, 10, 13, 15-16, 18 and 25-30 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,342,057 to Brace *et al.* ("Brace");
- rejected claim 17 under 35 U.S.C. 103(a) as being unpatentable over Brace;
- objected to claim 20 as being dependent on a rejected base claim. Otherwise the subject matter of claim 20 would be allowable if rewritten in independent claim form to include all of the limitation of the base claim and any intervening claims.

## INDEPENDENT CLAIM 6

Independent claim 6 has been rejected as being anticipated by Caspar. In addition, independent claim 6 has been rejected as being anticipated by Brace. Independent claim 6 requires, *inter alia*, an

outer stem and at least one drill guiding barrel attached to the outer stem, wherein the at least one drill guiding barrel is movably attached to the outer stem at a substantially fixed angle with respect to the outer stem. That is, the at least one drill guiding barrel incorporates predetermined trajectories that form passageways. While the drill guide, and hence the predetermined trajectories, may move with respect to the outer stem, the angle of the drill guide, with respect to the outer stem, remains constant throughout.

Caspar describes a drilling jig for surgical drilling tools consisting of two sleeves 2 joined by arms 3 which are pivotable about an axis of rotation “perpendicular to the plane formed by the two sleeves 2.” (See Caspar at 3:25-33, Fig. 1). More specifically, this “axis of rotation is formed by a screw 5 which passes through both arms 3,” so that movement of one sleeve with respect to the other sleeve causes the distal end of the sleeves to move closer together or farther apart. (*Id.* at 3:33-34, Fig. 4). Furthermore, “[t]he arms 3 are only pivotable relative to each other within a narrow angular range, more specifically, such that the sleeves 2 never extend exactly parallel, but are always at a slight incline to each other.” (*Id.* at 3:34-37). As an initial matter, Caspar does not disclose a drill guide that is movably attached to an outer stem. Rather, Caspar discloses two sleeves (i.e., drill guides) that are moveable with respect to one another. Moreover, when one sleeve is moved with respect to the other sleeve, the angle between the two sleeves 2 necessarily results in a change in relative angulation between the two sleeves 2.

Thus, it is respectfully submitted that Caspar does not teach, disclose, or suggest all of the limitations of independent claim 6. Withdrawal of this rejection and allowance of independent claim 6 is respectfully requested.

Moreover, independent claim 6 has been rejected as being anticipated by Brace. Independent claim 6, *inter alia*, requires an outer stem having a bore, a rod at least partially disposed in the bore and releasably attached to both the outer stem and a bone plate, and a release mechanism for securing the outer stem to the rod.

Brace describes a remotely aligned surgical drill guide having an alignment device 110 including a taper pin 204 attached to an actuation bar 116, and a bushing 206 having a guide bore 208. (Brace at 6:56-64, Figs. 6-7). “[T]aper pin 204 is configured and dimensioned to be slidably received within guide bore 208 of bushing 206,” and is moved by the actuation of the actuation bar 116. (*Id.* at 9:42-56; Figs. 6-10, 14-15). The bushing 206 is placed in the slot 252 of a bone plate 254, and the actuation bar 116 is actuated such that the tip 138 of the taper pin 204 is slightly driven into the bone. The tip 138 thus provides anchoring and guidance until the bushing 206 has been locked into place with the bone plate 254. (*Id.* at 10:3-12). The front end of the bushing 206, which locks into place with the bone plate 254, is comprised of longitudinally extending fingers 214 separated by longitudinal slits 216. (*Id.* at 7:1-4, Fig. 8). These fingers 214 are resiliently biased inwardly and naturally assume an inward disposition when the taper pin 204 is in the retracted position. (*Id.* at 7:7-10). When the taper pin 204 is pushed forward, the conical section 286 of taper pin 204 pushes outwardly against the inner surface of bushing 206. Thus, the fingers 214 of the bushing 206 are pushed radially outward so that they may lock into position with a bone plate. (*Id.* at 10:35-45). The taper pin, however, never comes into contact with the bone plate.

Contrary to the Examiner's argument, the rod, as indicated by the Examiner, is not capable of releasably engaging both the outer stem and a bone plate. Rather, the rod, according to the Examiner, has a tip 138 for piercing the patient's tissue and indenting the bone below the bone plate 254. (Brace at 10:7-12). Since the bushing 206 is placed in a slot 252 of the bone plate 254, it is impossible for the rod, as indicated by Examiner, to engage both the outer stem 206 and the bone plate 254. Thus, it is respectfully submitted that Brace does not teach, disclose, or suggest all of the limitations of independent claim 6. Withdrawal of this rejection and allowance of independent claim 6 is respectfully requested.

Furthermore, Brace describes a variable angle block 202 that comprises a bridge member 312, which joins outer surfaces of drill tubes 134, 136, as well as angulation arms 314, 316. (Brace at 11:65-12:1, Figs. 16-19). Shoulder portions 322, 324 of angulation arms 314, 316 respectively are accommodated within side channels 223 on the sides of bushing 206. Shoulder portions 322, 324 ride smoothly within the side channels, thereby guiding and facilitating the orientation of variable angle block 202. (*Id.* at 12:2-7, Figs. 8, 17). A shaft screw 323 is inserted within holes 325a, 325b of angulation arms 314, 316 respectively to connect the angulation arms 314, 316. (*Id.* at 12:18-21). Consequently, the variable angle block 202 cannot be removed from the bushing 206, which allows for a limited range of angular movement in a single plane. (*Id.* at 12:21-29).

It is respectfully submitted that the drill guiding barrel described by Brace is not movably attached to an outer stem at a substantially fixed angle with respect to the outer stem. Rather, the drill guiding barrel described by Brace can only pivot about a pivot pin that is perpendicular to the

longitudinal axis of the outer stem. Hence, the drill guiding barrel is only movable with respect to the outer stem. Movement of the drill guiding barrel with respect to the outer stem causes the distal ends of both to move closer together or further apart, necessarily causing a change in angulation between the drill guiding barrel and the outer stem. Thus, it is respectfully submitted that Brace does not teach, disclose, or suggest all of the limitations of independent claim 6. Withdrawal of this rejection and allowance of independent claim 6 is respectfully requested.

For at least the above-identified reasons, it is respectfully submitted that neither Caspar nor Brace disclose, teach or suggest all of the limitations of independent claim 6. Thus, it is respectfully submitted that independent claim 6 is allowable over the cited prior art. Withdrawal of these rejections and allowance of independent claim 6 is respectfully requested.

Furthermore, as claims 7-13 and 15-18 all depend from independent claim 6, it is submitted that these claims are equally allowable. Withdrawal of these rejections and allowance of claims 7-13 and 15-18 is also respectfully requested.

#### **INDEPENDENT CLAIM 20**

Dependent claim 20 was objected to as being dependent on a rejected base claim. Otherwise the subject matter of claim 20 would be allowable if rewritten in independent claim form to include all of the limitation of the base claim and any intervening claims. The Examiner is thanked for the indication of allowable subject matter in claim 20, which has been written in independent claim form to include all

of the limitations of base claim 6 and intervening claim 8. Withdrawal of this objection and allowance of claim 20 is respectfully requested.

#### **INDEPENDENT CLAIM 25**

Independent claim 25 has been rejected as being anticipated by Caspar. In addition, independent claim 25 has been rejected as being anticipated by Brace. Independent claim 25 requires, *inter alia*, an outer stem having a first longitudinal axis and a drill guiding barrel, the drill guiding barrel being pivotable about an axis of rotation disposed outside of the outer stem and substantially parallel to the first longitudinal axis.

As previously discussed in connection with independent claim 6, it is respectfully submitted that Caspar does not disclose an outer stem and a drill guide barrel attached thereto. Rather, Caspar discloses a pair of sleeves, (i.e., drill guides) which are pivotable with respect to each other. Moreover, the only possible axis of rotation between the two sleeves is perpendicular to the longitudinal axis of the sleeves. Contrary to the Examiner's assertion, it is respectfully submitted that Caspar describes a pair of drill guiding barrels that can only be pivoted about an axis of rotation perpendicular to the longitudinal axis of the drill guiding barrels. It is respectfully submitted that Caspar does not disclose, teach, or suggest a drill guiding barrel that is pivotable about an axis of rotation substantially parallel to the longitudinal axis of an outer stem. Therefore, it is respectfully submitted that Caspar does not disclose, teach, or suggest all of the limitations of independent claim 25. Withdrawal of this rejection and allowance of independent claim 25 is respectfully requested.

As previously discussed in connection with independent claim 6, it is respectfully submitted that the drill guiding barrel described by Brace cannot pivot about an axis parallel to the longitudinal axis of the outer stem. The variable angle block is attached to the outer stem such that the drill guiding barrel is only pivotable about an axis perpendicular to the longitudinal axis of the outer stem. Thus, it is respectfully submitted that Brace does not disclose, teach, or suggest a drill guiding barrel that is pivotable about an axis of rotation substantially parallel to the first longitudinal axis. Therefore, it is respectfully submitted that Brace does not disclose, teach, or suggest all of the limitations of independent claim 25. Withdrawal of this rejection and allowance of independent claim 25 is respectfully requested.

For at least the above-identified reasons, it is respectfully submitted that neither Caspar nor Brace disclose, teach or suggest all of the limitations of independent claim 25. Thus, it is respectfully submitted that independent claim 25 is allowable over the cited prior art. Withdrawal of these rejections and allowance of independent claim 25 is respectfully requested.

Furthermore, as claims 26 and 27 both depend from independent claim 25, it is submitted that these claims are equally allowable. Withdrawal of these rejections and allowance of claims 26 and 27 is also respectfully requested.

#### **INDEPENDENT CLAIM 28**

Independent claim 28 has been rejected as being anticipated by Caspar. In addition, independent claim 28 has been rejected as being anticipated by Brace.

Independent claim 28 requires, *inter alia*, a drill guiding barrel pivotably attached to the outer stem at the exterior surface such that the drill guiding barrel can pivot while maintaining a substantially fixed angle with respect to the outer stem. That is, the at least one drill guiding barrel incorporates predetermined trajectories that form passageways. While the drill guide, and hence the predetermined trajectories, may move with respect to the outer stem, the angle of the drill guide, with respect to the outer stem, remains constant throughout. As previously described above in connection with independent claim 6, it is respectfully submitted that Caspar does not disclose, teach, or suggest a drill guiding barrel that can pivot while maintaining a substantially fixed angle with respect to the outer stem. Rather, Caspar discloses a pair of drill guides that are movable with respect to one another. Movement of one drill guide with respect to the other causes the distal ends to move closer together or further apart, and hence necessarily causes a change in angulation. Therefore, it is respectfully submitted that Caspar does not disclose, teach, or suggest all of the limitations of independent claim 28. Withdrawal of this rejection and allowance of independent claim 28 is respectfully requested.

In addition, as previously described above in connection with independent claims 6 and 25, it is respectfully submitted that Brace describes a drill guiding barrel that can only pivot about a pivot pin that is perpendicular to the longitudinal axis of the outer stem, hence any pivoting of the drill guiding barrel necessarily results in a change in relative angulation between the drill guiding barrel and the outer stem. Therefore, it is respectfully submitted that Brace does not disclose, teach, or suggest all of the limitations of independent claim 28. Withdrawal of this rejection and allowance of independent claim 28 is respectfully requested.



For at least the above-identified reasons, it is respectfully submitted that neither Caspar nor Brace disclose, teach or suggest all of the limitations of independent claim 28. Thus, it is respectfully submitted that independent claim 28 is allowable over the cited prior art. Withdrawal of these rejections and allowance of independent claim 28 is respectfully requested.

Furthermore, as claims 29 and 30 both depend from independent claim 28, it is submitted that these claims are equally allowable. Withdrawal of these rejections and allowance of claims 29 and 30 is also respectfully requested.

## CONCLUSION

A fee of \$200.00 is believed due with this submission. The Commissioner is authorized to charge this and any other fee which may now or hereafter be due in this application to Deposit Account No. 19-4709.

In the event that there are any questions, or should additional information be required, please contact Applicants' attorney at the number listed below.

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Respectfully submitted,

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